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AUTHOR Bensley, Loren B., Jr.
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ABSTRACT

Health Hazard Appraisal (HHA), or risk factor analysis, is a health education preventive medicine technique that assists people in recognizing their health risks and, through their own actions, in improving both their sense of well-being and their life expectancy. HHA, an educational tool in implementing theoretical behavior changes, is based on the premise that all people are subject to risks that can be identified and often reduced. The most common form of using the HHA is to complete a questionnaire, and to send it to a computer center, where a print-out is produced and sent back to the participant. Most HHA's will give an individual an indication of his present age, his health age, and an achievable age. In addition, they indicate the remaining years of life the individual has to live assuming he continues his present lifestyle. An achievable life expectancy is given if he chooses to change particular habits or behaviors, and specific behaviors are indicated as to what needs to be changed in order to live a longer life. Most HHA's are designed for adult populations and are used extensively at the university level; currently they are also being developed for use with the elementary age child and adolescent. Programs in some schools in Michigan and Florida now exist. (JM)

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by
Loren B. Bensley, Jr., Ed.D.
Professor
Department of Health Education and Health Science
Central Michigan University

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As health educators we are constantly striving for different motivational techniques to convince people that they should practice healthy behaviors. It is common knowledge that when we lose our state of good health we become motivated to care for ourselves. It is unfortunate that some of us are not motivated to do something about our state of health until stricken with pain or illness.

On the other hand we must recognize, that even though there are people who practice poor health lifestyles, we do live in an age where health promotion is in vogue. People are doing more for themselves in keeping healthy by preventing illness than any other time in the history of this nation. All one needs to do is notice the number of people jogging or go into a bookstore and see the volumes of books written on stress reduction, weight control, exercise programs, etc. There are also health spas and sports clubs that never existed five years ago. New wellness clinics and holistic health centers have sprung up around the country based on the premise that it is an "in thing" to take care of yourself and stay healthy. A new specialty of medicine called "prospective medicine" has developed and is becoming more and more an accepted medical discipline. The Federal government has put more dollars into health promotion and health education activities in the past five years than in any previous time in history.

Two monumental documents out of the federal government, Healthy People and Promoting Health Preventing Disease Objectives For the Nation sets forth achievable goals in developing a more healthy nation. We have health education

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efforts today that were never heard of ten to twenty years ago. Such terms as patient education, health education in the workplace, health promotion programs and wellness and holistic health campaigns is a new language to health education which has emerged over the past two decades. All of these events have been positive and encouraging for us in the profession of health education. But even with the new advancements in programming, support from the Federal Government and the private sector, there are still health problems that can be prevented through health education and behavioral change tactics.

In studying a variety of educational philosophies as well as learning theories, it becomes evident that the learner must be motivated for learning to take place and desirable behaviors to result. A new approach in motivation for behavior change came about through the evolution of the Health Hazard Appraisal. "Health Hazard Appraisal (HHA) or risk factor analysis is a health education in preventive medicine technique that assists people in recognizing their health risks and, through their own actions, improving both their sense of well-being and their life expectancy."[1]

The Health Hazard Appraisal is a unique tool "...based on the premise that all people are subject to risks that can be identified and often reduced." It assists people in recognizing their health risks and then to take actions to improve their sense of well-being in their life expectancy."[2] Lydia Ratcliff summarizes the use of health risk appraisals when she states, "in some, the health hazard appraisal is a tool to help individuals see their health risks and to encourage them to think in terms of a healthy lifestyle."[3] One becomes motivated after taking a health hazard appraisal and seeing the results. Given in months or years the participants life expectancy, based on the health lifestyle that he/she presently lives is presented with suggestions to change their lifestyle in a more positive way. Participants can clearly

see by results of the appraisal that they can add months and in some cases years to their life.

"In summary the Health Hazard Appraisal seems to have these benefits:

1. It helps people to understand the meaning of "risk-taking" in relation to their behavior patterns, and brings home the fact that how we live often determines when we die.

2. It demonstrates, through the concepts of risk age and achievable age, the effects of risk-taking and shows that individual risks not only add to but compound one another.

3. It personalizes lifestyle hazards and helps the individual to realize, "It can happen to me."

4. It indicates the relative importance of lifestyle risks so the individual can choose which risks he or she wishes to do something about and where to start.

5. It conveys a sense of urgency, which can help to motivate an individual to make changes. For example, the fact that heart attack and lung cancer are the first and second causes of death of men in the 45-64 age group may indicate to the male cigarette smoker his priority for prevention.

6. It provides a prospect and a measure of reduced risk if certain bad habits are altered."[4]

A Health Hazard Appraisal is an excellent educational tool in implementing theoretical behavior changes, models, such as the "health beliefs" or "PRECEDE" models. Furthermore when used by those who have healthy practices, positive feedback is given which encourages continuation of healthy behaviors.

Health Hazard Appraisals are being used in a variety of settings usually with adult populations. Some of these settings are in business and industry, hospitals, physicians in private practice, university health services, health and life insurance companies, unions and health educators in community and educational settings such as public schools, colleges and universities. Today we are concerned with the use of Health Hazard Appraisals in the educational setting. Furthermore we are interested in the use of Health Hazard Appraisals as they relate to computers. Most Health Hazard Appraisals that are compre-

hensive and would be valuable in educational setting are computerized programs which give participants print-out or visual monitor readings.

The most common form of using the Health Hazard Appraisal is to complete a questionnaire, send it to a computer center where a print-out is produced and sent back to the participant. The comprehensiveness of the print-out information is based on the degree of the questionnaire. Most Health Hazard Appraisals will give an individual an indication of their present age, their health age, and an achievable age. In addition to this they will indicate the remaining years of life the individual has to live assuming they continue their present lifestyles. An achievable life expectancy is given if they choose to change particular habits or behaviors. In addition to this, specific behaviors are indicated as to what needs to be changed in order to live a longer life.

As mentioned earlier, most Health Hazard Appraisals are designed for adult populations. It is very difficult to develop Health Hazard Appraisals for youngsters or adolescents due to the fact that the precursors of the leading causes of death have not developed in the younger age group. An exception to this would be those behaviors related to accidents, suicide, and homicide. In a 1980 inventory of twenty-nine representative health risk appraisal instruments available to the public, approximately two were specifically directed at teenagers or young adults.[5] There are, however, attempts to utilize the technique of Health Hazard Appraisals and apply instruments examining health lifestyles to younger age groups. One such approach was designed and is to be field tested in Michigan by the Michigan School Health Association and the Michigan Health Council. This program titled, "Wellness Profiles" is a questionnaire regarding health behaviors of children in grades kindergarten through grade twelve. The overall goal of this project is to allow children to become aware of their health risks and hopefully change behaviors.

In reviewing the literature, the Michigan program is the only program that could be found that was being used at the elementary level. At the junior high school level, a program developed by the St. Paul Schools, titled "Health-Lifestyle Assessment Project" was designed to increase the awareness and responsibility for health behavior patterns which will determine the student's future level of health.

In this particular program, the student completes a programmed questionnaire, answering questions on nutrition, exercise, safety, rest, drugs and emotional behaviors and attitudes. In addition to this the students are asked their weight, height, blood pressure, hemoglobin, immunization record and family history. A computer processes each individual's answers and provides a personalized print-out of information to help them improve their health behaviors.[6] Using the computer print-out each student sets a goal and devises a plan to achieve the goal. Students are provided with guidelines and assistance throughout this process.

Another computerized health profile model for adolescents has been developed in Florida titled "4-H for Life." In this particular project "...youth select at an early age lifestyles conducive to health in the hope of not only prolonging their lives but improving the quality of their lives as well."[7]

This project is an example of adapting a traditional Health Hazard Appraisal to a young adult audience by the process of converting risk appraisal age to a scoring system based on 100 points. Students then received health risk scores instead of a health risk age. After completing a questionnaire each student is presented with a computer print-out analyzing their lifestyle and health risks.[8]

There is a great deal of potential in developing Health Hazard Appraisals for adolescents as well as for elementary school children. Constructed in the proper way they can be an excellent learning tool as well as motivational technique to help children develop healthy lifestyles.

Health Hazard Appraisals have been used extensively in college and university settings. Most often they are used by university health services. A study by Dieleman titled, "Utilization of a Health Appraisal System by Selected College and University Health Services" indicates, "in most cases, college and university health services select a self-administered student health appraisal system to replace the traditional examination report. The system is not selected to provide health risk or lifestyle educational information to students."[9]

In some cases Health Hazard Appraisals are used by university health services in lieu of the physical examination, while at the same time for educational purposes. An example of this is the model that has been developed at the University of South Carolina. Their program called "Open Door" is a program designed to include peer group counseling to students after they have taken a computerized Health Hazard Appraisal. This particular program is well established and has attained nationwide recognition.[10]

Bowling Green State University has also experimented with using the computerized Health Hazard Appraisal with peer counseling. The program's goal is to make students aware of risk factors and show them how they will affect the quality and length of their lives. "The program helps students choose appropriate courses of action to curb present risks and to prevent those which may occur in the future."[11]

Using health risk appraisals solely as a teaching tool has been experimented with at Ohio State by Chenoweth who conducted a study with a group of

students in a health education class compared to a control group. Both groups were given the Health Hazard Appraisal at the beginning of the course and at the end of the course. The experimental group received an interpretation and a personal interview with the professor to discuss the results of the Health Hazard Appraisal. The control group received no interpretation of the feedback or individualized conference with the professor. The results of the study showed that students in the experimental group increased their differential age mean significantly more than students in the control groups from the pre- to post-test time. Chenoweth has also experimented with the health risk appraisal as a learning tool in health education courses at East Carolina University.[12]

Bensley, in his study, "Utilizing Health Risk Appraisals in Teaching Health Education in Colleges and Universities" utilized the results of the Health Hazard Appraisal in designing the curriculum for personal health class. Students designed personal health behavior projects based on the results of their Health Hazard Appraisal. The course was then designed to assist the students in achieving health behavior change goals. The results of the study indicated that changes in health behaviors between August and December resulted due to the use of the health hazard appraisal. A positive attitude toward the use of Health Hazard Appraisals in motivating individuals to study health and to make behavioral changes was also an outcome of the study.[13]

Costello and Festa of the University of South Carolina have used Health Hazard Appraisals in personalizing an introductory health course. Their experimentation showed that there were significant lifestyle changes for those who used Health Hazard Appraisals compared to those who did not use them.[14]

The future of Health Hazard Appraisals in health education is bright. Adaptation of the traditional Health Hazard Appraisal for adults can be designed

for children. This has been done with the "4-H for Life Project" in Florida as well as the "Health Profiles" being developed in Michigan. In addition to this, the excellent work in the St. Paul Public Schools on their health life-style assessment project is significant in serving as a model for future use of computerized health risk appraisals.

Research efforts by health educators as well as computer programmers will shape the future of using computerized Health Hazard Appraisals as a motivator in changing health lifestyles of school aged children. With the creativity and skills of educators and the technological knowledge of data processing and computer scientists, Health Hazard Appraisals can become a valuable learning tool in meeting the goals of health education.

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